INDEX

HIGH ENERGY CHEMISTRY

Volume 6, Numbers 1-6, 1972

HIGH ENERGY CHEMISTRY

Volume 6, Numbers 1-6, 1972

(A translation of Khimiya Vysokikh Énergii)

A

Abdrashitov, E. F. – 173
Akopyan, M. E. – 15, 96, 255
Alfimov, M. V. – 1, 154, 156, 171
Andreeva, T. L. – 368
Antoshin, G. V. – 84
Avdeev, V. G. – 470

B

Bagdasar'yan, Kh. S. – 36
Bakh, N. A. – 388, 416
Baronov, G. S. – 51
Baranova, N. M. – 114
Bazhin, N. M. – 377
Bekova, Sh. Kh. – 308
Berdnikov, V. M. – 377
Berezovskaya, E. N. – 316
Bezmozgin, E. S. – 363
Blyumenfel'd, A. L. – 166
Bobrovskii, A. P. – 109
Bol'shakova, S. I. – 312
Bondarevskii, S. I. – 435
Borisov, E. A. – 153, 420, 487
Borovkov, V. V. – 487
Briskman, B. A. – 28
Brodskii, A. M. – 175, 201
Brui, O. I. – 80
Brusentseva, S. A. – 340
Buben, N. Ya. – 171
Bugaenko, L. T. – 180, 285
Bulanov, I. A. – 420
Bulanov, L. A. – 487
Bulgakov, R. G. – 438
Burzel', F. B. – 494
Byakov, V. M. – 285
Bychkov, N. V. – 127

C

Cherednikov, V. N. – 51, 461
Chertorizhskii, A. V. – 32, 61
Chervetsova, I. N. – 145, 146
Chervonenko, V. S. – 82
Chibisov, A. K. – 442
Chkheidze, I. I. – 66, 166

D

Deev, Yu. S. – 483
Degteva, T. G. – 489
Dmitrieva, E. V. – 438
Dmitrieva, G. V. – 151
Dmitrievskii, V. A. – 51
Dodonov, A. M. – 334
Dolin, P. I. – 42, 46, 130, 418
Dontsova, E. G. – 100, 475
Dozorov, A. A. – 481
Dzhagatspanyan, R. V. – 360
Dzhurzha, V. V. – 435

E

Efimova, T. I. – 138
Egorov, B. N. – 68, 177
Egorov, G. F. – 149, 151
Egorova, V. A. – 86
Egorova, Z. S. – 148, 397
Egunov, A. V. – 32
Ershov, B. G. – 134, 332
Evdokimov, O. B. – 124
Evlasheva, T. I. – 347
Evseev, A. G. – 170

F

Fel', N. S. – 418
Filatov, E. S. – 161
Filimonova, G. V. – 446
Frankevich, E. L. – 23, 39, 382
Frunze, T. A. – 46
Furman, M. S. – 394

G

Gil'man, A. B. – 482
Gol'dfarb, V. M. – 363
Gorbachenko, G. M. – 483, 485
Gorbunova, S. P. – 168
Gromov, V. V. – 49
Gurevich, B. M. – 363
Guseinov, A. M. D. – 316

I

Il'icheva, Z. F. – 489
Ivanov, V. L. – 446

K

Kabakchi, A. M. – 145, 146
Kabakchi, S. A. – 46
Kaplan, I. G. – 224
Karaban, A. A. – 168
Karasev, A. L. – 391, 456
Karlin, A. V. – 170
Karpov, V. L. – 68, 147, 148, 177, 397
Kartasheva, L. I. – 76
Karyakin, A. B. – 442
Kashevskaya, N. G. – 170
Kasperovich, A. I. – 127
Kazakov, V. P. – 326, 438
Kazanskii, V. B. – 104
Khaikin, G. I. – 130
Khalkin, V. A. – 161
Khokhlov, R. V. – 276
Kholmogorov, V. E. – 109
Khovanovich, A. I. – 324
Kolbanovskii, Yu. A. – 58, 74
Kolotyrkin, V. M. – 482
Komarov, P. N. – 114
Komarov, V. N. – 310, 356
Kornienko, V. N. – 153
Korobeinikova, V. N. – 326
Kostin, A. K. – 388
Kotov, A. G. – 297, 422
Kotov, B. V. – 330
Kovalev, Yu. V. – 36
Kozlov, V. T. – 39, 170
Krylov, O. V. – 449
Krylova, I. A. – 138
Kryulov, A. I. – 86
Kulakov, V. V. – 452

Kuleshov, A. N. – 66
Kuleshov, A. P. – 63
Kulikov, P. A. – 60
Kulskov, V. V. – 388
Kupriyanov, S. E. – 90, 93, 266
Kuzin, V. I. – 161
Kuz'min, M. G. – 214, 446
Kuz'min, V. A. – 338, 442
Kuz'minskii, A. S. – 312
Kuznetsov, O. I. – 316
Kuznetsova, S. V. – 368

L

Ladygin, B. Ya. – 80, 394
Lapidus, O. V. – 485
Lebedev, Ya. S. – 285, 328, 431
Leonas, V. B. – 183
Leshchenko, S. S. – 147, 148, 397
Lopatin, S. N. – 96
Lyapidevskii, V. K. – 483, 485
Lysun, N. V. – 88

M

Maloetko, A. V. – 324
Mamikonyan, E. R. – 425
Maslov, A. I. – 368
Medvedev, A. S. – 49
Medvedovskii, V. I. – 149
Migachev, A. I. – 51
Milovanova, A. S. – 54
Milyaev, V. B. – 309
Milyutinskaya, R. I. – 36
Minachev, Kh. M. – 84
Minsker, K. S. – 326
Miretskii, V. Yu. – 59, 70
Mogilev, V. I. – 394
Molodov, L. A. – 118
Mosse, A. L. – 138
Murin, A. N. – 435
Myasnikov, I. A. – 159

N

Nefedov, V. D. – 161
Neokladnova, L. N. – 491
Nikol'skil, V. G. – 452
Norseev, Yu. V. – 161
Novikov, G. F. – 39
Novikov, V. M. – 481
Novosel'tsev, A. M. – 310

O

Ochkin, V. N. – 19
Oraevskii, A. N. – 194
Orlov, V. Yu. – 152
Ovsyannikov, A. A. – 74

P

Panchenko, G. M. – 316
Pangarov, N. – 407
Panin, V. I. – 118
Pansevich, V. V. – 491
Parshin, G. S. – 438
Pavelko, G. F. – 88
Pavlova, Zh. D. – 147, 148, 399
Pikaev, A. K. – 76, 78, 134, 201, 332
Piskunov, A. K. – 321, 374, 414
Plyusnin, V. F. – 377
Polak, L. S. – 72, 74, 164, 236, 350, 425
Ponomarev, A. I. – 170
Potapov, V. K. – 255, 330, 343
Pozdeev, V. V. – 70
Pshezhetskii, S. Ya. – 297
Puntezhis, S. A. – 134

R

Raichevskii, G. – 407, 464
Raichuk, F. Z. – 32, 61
Roginskaya, B. S. – 127
Roginskii, V. A. – 82
Roketashvili, E. B. – 58
Romantsev, M. F. – 88
Rudnev, A. V. – 416
Rufov, Yu. N. – 308
Rusin, L. Yu. – 183
Ryabov, E. A. – 32

S

Safin, Yu. A. – 360
Sapezhinskii, I. I. – 100, 475
Sergeev, Yu. L. – 15
Sevast'yanova, I. V. – 170
Shagisultanova, G. A. – 168
Shamonina, N. F. – 422
Shamshev, V. N. – 171
Sharanin, Yu. I. – 42
Sharlov, A. Yu. – 175
Shchegoleva, I. S. – 336
Shcherbina, E. I. – 138
Shchipachev, V. S. – 74
Shelimov, B. N. – 104
Shiryaev, V. M. – 475
Shostenko, A. G. – 334
Shpiro, E. S. – 84
Shtan'ko, V. F. – 49
Shubin, V. N. – 42, 46
Shubina, N. A. – 19
Sidyakin, P. V. – 68, 177
Silivanchik, I. P. – 491
Simonov, A. P. – 276
Skurat, V. E. – 224
Skvortsov, V. I. – 154
Slovetskii, D. I. – 72, 164, 350, 425
Slovokhotova, N. A. – 489
Smirnov, V. A. – 156
Sobel'man, I. I. – 368
Soboleva, T. K. – 23
Sokolik, 382
Sokolov, A. S. – 164, 347, 350
Sokolova, I. G. – 321
Soldaeva, N. P. – 326
Sorokin, V. N. – 368
Sorokin, V. V. – 343, 347
Starodubtseva, E. U. – 420
Sudnik, M. V. – 88
Surin, S. A. – 104

T

Tal'roze, V. L. – 194
Taranenko, L. A. – 152
Taranukha, O. M. – 328
Tarasov, V. A. – 435
Terekhov, G. A. – 149
Tikhomirov, L. A. – 173
Tikhomirov, M. V. – 310, 356
Tikhonov, A. S. – 168
Titov, V. B. – 175
Tkachenko, O. P. – 84
Tkachenko, V. V. – 324
Toropova, M. A. – 161
Tovbin, Yu. K. – 32
Trofimov, V. I. – 63, 66, 166
Tsivenko, V. I. – 159
Tubalov, N. P. – 124
Tunitskii, N. N. – 482

U

Usatyi, A. F. – 118, 313

V

Vannikov, A. V. – 416
Vasil'ev, G. K. – 194
Vasil'ev, V. G. – 374, 414
Verbovskaya, G. V. – 90
Verein, N. V. – 374, 414
Vereshchinskii, I. V. – 59, 70
Verkhgradskii, O. P. – 145, 146
Vilesov, F. I. – 15, 96, 255, 309
Vinokurov, L. Kh. – 363

Virin, L. I. – 360
Vladimirova, M. V. – 54, 60, 403
Vladimirova, V. I. – 449
Volkov, N. G. – 483, 485
Volodin, V. M. – 470
Vorob'ev, A. A. – 124
Voskerchyan, G. P. – 431

Z

Zagorebs, P. A. – 151, 334
Zaozerskaya, L. A. – 375
Zhabrova, G. M. – 449
Zhdamirov, G. G. – 153
Zhestkova, T. P. – 78
Zhigunov, V. A. – 130
Zhukova, T. N. – 332
Zhuravleva, T. S. – 321
Zigmunt, M. M. – 489

HIGH ENERGY CHEMISTRY
Volume 6, Numbers 1-6, 1972
(A translation of Khimiya Vysokikh Énergii)

Volume 6, Number 1 January-February, 1972

	Engl.	Russ.
Excited Triplet Molecular States in Radiation Chemistry (Review) – M. V. Alfimov	1	3
Ionic-Molecular Reactions in the Photoionization of Halogen Derivatives of Benzene – Yu. L. Sergeev, M. E. Akopyan, and F. I. Vilesov	15	21
Effect of Added Water Vapor on the Processes Occurring in the Gaseous Discharge Plasma of a CO_2 Laser – V. N. Ochkin and N. A. Shubina	19	26
Delayed Carrier Generation in the Surface Photoconductivity of Anthracene – T. K. Soboleva and E. L. Frankevich	23	31
Determination of Radiation Yields in Experiments with Mixed Radiation – B. A. Briskman	28	38
Radiation Chlorination of the Methyl Group in Toluene. II. The Effect of Dose Rate and Temperature – E. A. Ryabov, A. V. Egunov, A. V. Chertorizhskii, F.Z. Raichuk, and Yu. K. Tovbin	32	43
Comparison of Recombination Luminescence Induced by UV Light and Fast Electrons – Yu. V. Kovalev, R. I. Milyutinskaya, and Kh. S. Bagdasar'yan	36	47
The Effect of Light on Radiation Cross-Linking of Glassy Elastomers of Varying Structure – G. F. Novikov, V. T. Kozlov, and E. L. Frankevich	39	51
Theory of Pulse Radiolysis in an Electrical Field – Yu. I. Sharanin, V. N. Shubin, and P. I. Dolin	42	55
Kinetic Characteristics of the Water–Nitrous Oxide–Hydrogen System in a Periodic Radiation Field – T. A. Frunze, S. A. Kabakchi, V. N. Shubin, and P. I. Dolin	46	60
EPR Investigation of the Radiolysis Products of Barium and Calcium Selenites – A. S. Medvedev, V. V. Gromov, and V. F. Shtan'ko	49	63
Cheminuclear Synthesis of Nitrogen Trifluoride – G. C. Baronov, V. A. Dmitrievskii, A. I. Migachev, and V. N. Cherednikov	51	65
α-Radiolysis of HNO_3 Solutions and Acid $NaNO_3$ Solutions – M. V. Vladimirova and A. S. Milovanova	54	69
ABSTRACTS		
Kinetics of the Radiation-Chemical Decomposition and Adsorption of Nitrous Oxide on γ-Al_2O_3 – Yu. A. Kolbanovskii and E. B. Roketashvili	58	73
The Radiation-Chemical Synthesis of Dialkyltin Dibromides. II. An Investigation of the Conditions for the Formation of Tributyltin Bromide and Tin Dibromide in the Synthesis of Dibutyltin Dibromide – V. Yu. Miretskii and I. V. Vereshchinskii	59	74
Radiation-Induced Reduction of NpO_2^{2+} Ions under the Effect of γ-Radiation in $HClO_4$ Solutions – P. A. Kulikov and M. V. Vladimirova	60	75
Radiation Chlorination of the Methyl Group in Toluene. I. "Dark" and γ-Radiation Initiated Chlorination of Toluene – E. A. Ryabov, A. V. Egunov, A. V. Chertorizhskii, and F. Z. Raichuk	61	
BRIEF COMMUNICATIONS		
Temperature Changes in the EPR Spectrum of the 2-Hydroxypropyl Radical in Various Matrices – A. P. Kuleshov and V. I. Trofimov	63	79

	Engl.	Russ.
Radicals Formed During γ-Irradiation of Alkyl Halides in Urea – A. N. Kuleshov, V. I. Trofimov, and I. I. Chkheidze	66	82
Radiation-Chemical Transformations in Solid Epoxy-Bisphenol A Resins Obtained From 4.4'-Dihydroxydiphenylpropane and Epichlorohydrin – P. V. Sidyakin, V. L. Karpov, and B. N. Egorov	68	84
Radiation-Chemical Synthesis of Dialkyltin Dibromides. III. Reaction of Butyl Bromide with Metallic Tin in the Presence of Magnesium and Zinc – V. Yu. Miretskii, I. V. Vereshchinskii, and V. V. Pozdeev	70	85
The Excitation of the Electronic Levels of the Nitrogen Molecule by Electron Impact – L. S. Polak and D. I. Slovetskii	72	87
The Kinetics of Processes Occurring in I_2 during Photoexcitation. I. Fluorescence in Absence of Collisions and External Fields – Yu. A. Kolbanovskii, A. A. Ovsyannikov. L. S. Polak, and V. S. Shchipachev	74	88
Initial Yields of Hydrogen Peroxide in the γ-Radiolysis of Aqueous Solutions of Benzene in the Presence of Oxygen – L. L. Kartasheva and A. K. Pikaev	76	90
Use of Concentrated Aqueous Solutions of Ammonium Nitrate with Additions of Methanol for Determining γ-Radiolysis Doses Up To $6 \cdot 10^8$ rad – T. P. Zhestkova and A. K. Pikaev	78	92
γ-Radiolysis of Cyclohexanol Solutions of Certain Aliphatic Aldehydes – B. Ya. Ladygin and O. I. Brui	80	93
Free Radical Photochemistry. Monocarboxylic Acid Anhydride Radicals – V. S. Chervonenko and V. A. Roginskii	82	95
The Effect of Ultraviolet Radiation on the Catalytic Activity of Aluminum and Magnesium Oxides – G. V. Antoshin, O. P. Tkachenko, Kh. M. Minachev, and E. S. Shpiro	84	
Photochemical Properties of the Charge-Transfer Complex of Chloranil with Dimethylaniline – A. I. Kryukov and V. A. Egorova	86	98
Inhibition of Radiation-Induced Oxidation by Stable Iminoxyl Radicals – M. F. Romantsev, N. V. Lysun, M. V. Sudnik, and G. F. Pavelko	88	100
Formation of $ArNO^+$, $KrNO^+$, and Other Ions in Reactions of Excited Atoms with Nitric Oxide Molecules – S. E. Kupriyanov and G. V. Verbovskaya	90	102

Volume 6, Number 2 March-April, 1972

Isotope Effects in Associative Ionization Processes – S. E. Kupriyanov	93	107
Photoionization of Benzyl Chloride – M. E. Akopyan, F. I. Vilesov, and S. N. Lopatin	96	110
Photoluminescence of Glycyltryptophane Solution: Effect of Divalent Copper Ions on Chemiluminescence – I. I. Sapezhinskii and E. G. Dontsova	100	115
Photodissociation of Molecular Hydrogen on a Silica Gel Surface That Has Been Sensitized with Transition Metal Ions – S. A. Surin, B. N. Shelimov, and V. B. Kazanskii	104	120
Participation of Singlet Oxygen in Dehydrogenation Photoreactions Sensitized by Tetrapyrroles – A. P. Bobrovskii and V. E. Kholmogorov	109	125
γ-Radiation-Initiated Oxidation of Isosafrole in Acetic Acid – N. M. Baranova and P. N. Komarov	114	131
Characteristics of Solid-State Free-Radical Reactions in Irradiated Linear and Cyclic Peptides – V. I. Panin, L. A. Molodov, and A. F. Usatyi	118	135
Space-Charge Accumulation and Relaxation in Polymers – A. A. Vorob'ev, O. B. Evdokimov, and N. P. Tubalov	124	142
Radiation Stability of the Salt Forms of the Anion Exchanger AV-17-8 – B. S. Roginskaya, N. V. Bychkov, and A. I. Kasperovich	127	146
The Solvated Electron in Irradiated Water–Ammonia Mixtures – G. I. Khaikin, V. A. Zhigunov, and P. I. Dolin	144	149

Thermal and Photolytic Conversions of the Primary Products from the Low-Temperature γ-Radiolysis of the Crystalline Hydrate $NaOH \cdot 3.5H_2O$ – S. A. Puntezhis, B. G. Ershov, and A. K. Pikaev 134 153

Study of the Composition of Individual Fractions in the Liquid Products from the Pyrolysis of Petroleum in a Plasma Jet – I. A. Krylova, A. L. Mosse, E. I. Shcherbina, and T. I. Efimova 138 157

ABSTRACTS

Distribution of Absorbed γ-Radiation Dose in Heterogeneous Systems. I. Determination of Photon and Electron Fluxes – O. P. Verkhgradskii, I. N. Chervetsova, and A. M. Kabakchi 144 164

Distribution of Absorbed γ-Radiation Dose in Heterogeneous Systems. II. Approximate Calculation of Absorbed Co^{60} γ-Radiation Dose Distribution in Organic Material Irradiated while in Contact *with* Metals – O. P. Verkhgradskii, I. N. Chervetsova, and A. M. Kabakchi 145 165

Distribution of Absorbed γ-Radiation Dose in Heterogeneous Systems. III. Dosimetry of Heterogeneous Systems and Determination of Radiation Yield – O. P. Verkhgradskii, I. N. Chervetsova, and A. M. Kabakchi 146 166

Ionization Mechanism of Organic Molecules – M. V. Gur'ev 146 167

Investigation of the Thermal Stability of Irradiated Polyolefins – Zh. D. Pavlova, S. S. Leshchenko, and V. L. Karpov 147 167

Change in the Degree of Unsaturation during the Thermal Destruction of Irradiated Polyolefins – Zh. D. Pavlova, S. S. Leshchenko, Z. S. Egorova, and V. L. Karpov... 148 169

Influence of Temperature on the Radiation Yields of Stable Radiolysis Products of n-Butylamine – G. F. Egorov, G. A. Terekhov, and V. I. Medvedovskii 149 170

Radiolysis of Tri-n-Octylamine and Solutions of Aliphatic Amines in Octane – G. V. Dmitrieva, G. F. Egorov, and P. A. Zagorets 151 172

Mass Spectra of Complex Molecules during Ionization with Metastable Atoms of Inert Gases and Photons – V. Yu. Orlov and L. A. Taranenko 152 173

Some Problems of Calculating the Kinetics for Radiation-Chemical Reactions in a Methane–Nitrogen Mixture – E. A. Borisov, G. G. Zhdamirov, and V. N. Kornienko 153 174

Determination of the Electron Capture Centers in Diethyl Ether by the Method of Recharging Cations from an Additive at 77°K* – V. I. Skvortsov and M. V. Alfimov 154 175

BRIEF COMMUNICATIONS

Behavior of Stabilized Electrons in Glassy Alcohols at 77°K – V. A. Smirnov and M. V. Alfimov 156 178

Use of Semiconductor Adsorption Detectors for Observing N Atoms in Active Nitrogen – V. I. Tsivenko and I. A. Myasnikov 159 180

Chemical Forms of Astatine-211 Produced in Processes of Electron Capture from Radon-211 in Liquid Hydrocarbons – V. I. Kuzin, V. D. Nefedov, Yu. V. Norseev, M. A. Toropova, E. S. Filatov, and V. A. Khalkin 161 181

Dissociation of the Nitrogen Molecule in a Glow Discharge – L. S. Polak, D. I. Slovetskii, and A. S. Sokolov 164 183

On the Nature of the Radicals in γ-Irradiated Solid Piperidine – V. I. Trofimov, I. I. Chkheidze, and A. L. Blyumenfel'd 166 185

Reactions of Pt(IV) and Pt(II) Complexes with Atomic Hydrogen – G. A. Shagisultanova, A. A. Karaban, A. S. Tikhonov, and S. P. Gorbunova 168 186

Radiation Stability of Polydimethylsiloxanes Containing Methylphenyl- or Diphenylsiloxane Groups in the Decomposition of Molecules into Radicals – V. T. Kozlov, A. G. Evseev, A. V. Karlin, A. I. Ponomarev, I. V. Sevast'yanova, and N. G. Kashevskaya 170 188

Radiation Yields of Triplet Molecules in Frozen Solutions – M. V. Alfimov, N. Ya. Buben, and V. N. Shamshev 171 188

Engl./Russ.

Radiolysis of Solutions of Manganous Chloride in Methyl Alcohol at 77°K – E. F. Abdrashitov and L. A. Tikhomirov 173 190
The Distinctive Feature of γ Radiolysis of Ethane Near Its Liquid–Gas Critical Point – A. Yu. Shaulov, V. B. Titov, and A. M. Brodskii 175 192
Radiation-Induced Conversions of Epoxy Resins – P. V. Sidyakin, V. L. Karpov, and B. N. Egorov 177 193

CHRONICLES
Third International Symposium on Radiation Chemistry – L. T. Bugaenko 180 196
Viktor Nikolaevich Kondrat'ev 182 198

Volume 6, Number 3 May-June, 1972

The Investigation of Elementary Chemical Reactions in Molecular Beams – V. B. Leonas and L. Yu. Rusin 183 203
Formation of Inverse Excitation in Chemical Reactions – G. K. Vasil'ev, A. N. Oraevskii, and V. L. Tal'roze 194 216
The Physical Chemistry of the Electron in a Condensed Medium – A. K. Pikaev and A. M. Brodskii 201 224
Elemental Reactions of Electronically Excited Molecules in Photochemistry – M. G. Kuz'min 214 239
Distribution of the Energy of Secondary Electrons and Track Effects. The Energy Spectrum of Secondary Electrons – I. G. Kaplan and V. E. Skurat 224 252
Elementary Processes in Plasma Chemistry – L. S. Polak 236 266
Viktor Ivanovich Spitsyn 254 287

Volume 6, Number 4 July-August, 1972

Elementary Processes of the Interaction of Photons with Free Molecules – M. E. Akopyan, F. I. Vilesov, and V. K. Potapov 255 291
Reactions of Electronically Excited Atoms and Molecules – S. E. Kupriyanov 266 304
Effects of the Powerful Photoexcitation of Organic Compounds in Solution – A. P. Simonov and R. V. Khokhlov 276 316
Spatial Nonuniformity in the Formation and Destruction of Intermediate Radiolysis Products – L. T. Bugaenko, V. M. Byakov, and Ya. S. Lebedev 285 327
Electronic Acts of Radiation Adsorption and Radiation–Heterogeneous Catalysis – A. G. Kotov and S. Ya. Pshezhetskii 287 341

ABSTRACTS OF PAPERS PRESENTED AT THE SECOND ALL-UNION CONFERENCE ON ELEMENTARY PROCESSES OF HIGH ENERGY CHEMISTRY
The Mechanism for Origin of Luminescence in Adsorption of Oxygen on Solids – Yu. N. Rufov and Sh. Kh. Bekova 308 353
Angular Distribution of Electrons Liberated in the Photoionization of Free Atoms and Molecules – V. B. Milyaev and F. I. Vilesov 309 354
Temperature Dependence of the Mass Spectra of the Simplest Alcohols – M. V. Tikhomirov, V. N. Komarov, and A. M. Novosel'tsev 310 356
Electron Reactions in the Low-Temperature Radiolysis of Rubber – S. I. Bol'shakova and A. S. Kuz'minskii 312 358
Formation of Free Radicals upon Radiation of Triglycine Sulfate in the Region of the Ferroelectric Transition – A. F. Usatyi 313 359

ARTICLES

Effect of Preirradiation on the Catalytic Properties of Zeolites Used for Isobutylene Conversion – G. M. Panchenko, A. M. D. Guseinov, O. I. Kuznetsov, and E. N. Berezovskaya 316 362

An Investigation of Certain Energy Relations during Double-Quanta Photoreactions – T. S. Zhuravleva, A. K. Piskunov, and I. G. Sokolova 321 368

BRIEF COMMUNICATIONS

Radiation Yield of Nitrite Ions in Concentrated Nitrate Solutions for Neutrons of Various Energies – V. V. Tkachenko, A. V. Maloetko, and A. I. Khovanovich . 324 371

Thermoluminescence of Poly-3-methylbutene-1 after Exposure to X-rays and Ultraviolet Light – V. N. Korobeinikova, V. P. Kazakov, K. S. Minsker, and N. P. Soldaeva 326 372

ESR Spectra of γ-Irradiated Frozen Formic Acid – O. M. Taranukha and Ya. S. Lebedev 328 374

Ionization Potentials of Strong Organic Electron Acceptors – B. V. Kotov and V. K. Potapov 330 375

Mechanism of the Effect of Alkali Admixtures of γ Radiolysis of Crystalline Nitrates – T. N. Zhukova, B. G. Ershov, and A. K. Pikaev 332 376

Composition of γ-Initiated Telomerization Products of Ethylene with Primary Alcohols – P. A. Zagorets, A. G. Shostenko, and A. M. Dodonov 334 378

Photoreduction of Methylviologen in Aqueous Alkaline Solutions – I. S. Shchegoleva 336 380

Reactions of the CO_3^- and SiO_3^- Radical Anions – V. A. Kuz'min 338 381

CHRONICLES

First Coordinating Conference on the Radiation Method of Purifying Water – S. A. Brusentseva 340 383

Volume 6, Number 5 September-October, 1972

Kinetic Energies of Products of Dissociative Photoionization of Molecules. I. Aliphatic Ketones and Molecules – V. K. Potapov and V. V. Sorokin 343 387

Photoionization of Heteroaromatic Compounds – V. K. Potapov, I. E. Kardash, V. V. Sorokin, S. A. Sokolov, and T. I. Evlasheva 347 392

Dissociation of Nitrogen Molecules from Excited Electronic States. I. Predissociation Efficiency – L. S. Polak, D. I. Slovetskii, and A. S. Sokolov 350 396

Thermal Isotopic Effects in the Mass-Spectra of C_2H_4 and C_2D_4 – V. N. Komarov and M. V. Tikhomirov 356 403

Ion-Molecular Reactions of Aromatic Compounds. VI. The Ethylbenzene–Carbon Tetrachloride System – L. I. Virin, Yu. A. Safin, and R. V. Dzhagatspanyan ... 360 408

Investigation of the Parameters and Gas Composition in the Initial Portion of an Argon–Hydrocarbon Plasma Jet – E. S. Bezmozgin, L. Kh. Vinokurov, V. M. Gol'dfarb, and B. N. Gurevich 363 411

Investigation of Reactions of Excited Iodine Atoms by Means of a Photodissociation Laser – T. L. Andreeva, S. V. Kuznetsova, A. I. Maslov, I. I. Sobel'man, and V. N. Sorokin 368 418

The Interaction of Electrons with Monomers in the Radiolysis and Photolysis of Ethanol. III. Photolysis in the Presence of Isobutylene, Acetylene, and Acetaldehyde. The Electron Affinity of the $C_2H_5O^{\cdot}$ Free Radical – V. G. Vasil'ev, N. V. Verein, and A. K. Piskunov 374 425

Formation of Cl_2^- Ion Radicals during the Photoreduction of Ce(IV) in a Hydrochloric Acid Matrix – V. F. Plyusnin, N. M. Bazhin, and V. M. Berdnikov 377 428

Photooxidation of Tetracene in the Liquid Phase. Effect of a Magnetic Field – B. L. Frankevich and I. A. Sokolik 382 433
Recombination Luminescence and Electron Stabilization in Alkylketones Irradiated at 77°K – A. K. Kostin, V. V. Kulskov, V. G. Nikol'skii, and N. A. Bakh 388 440
Radiolysis of Hydrocarbons in Inclusion Compounds with Urea – A. L. Karasev 391 444
Oxidation of Isomers of Methylcyclohexanol under the Action of Radiation – B. Ya. Ladygin, M. S. Furman, and V. I. Mogilev 394 447
Investigation of the Peculiarities of the Thermal Oxidation of Irradiated Polyolefins – Zh. D. Pavlova, S. S. Leshchenko, Z. S. Egorova, and V. L. Karpov 397 451
Effect of Linear Energy Transfer on the Radiation Yield in the Decomposition of Water in 0.4 M H_2SO_4 – M. V. Vladimirova 403 458
Determination of Yields of Molecular Products from the Radiolysis of Water by Potentiostatic Coulometry. Effect of pH – G. Raichevskii and N. Pangarov 407 462

ABSTRACTS
The Interaction of Electrons with Monomers in the Radiolysis and Photolysis of Ethanol. IV. Photolysis at 100-114°K; Mechanism and Thermochemistry of Photolysis – V. G. Vasil'ev, N. V. Verein, and A. K. Piskunov 414 471
BRIEF COMMUNICATIONS
Optical Absorption Spectra and Mobility of Solvated Electrons in Aliphatic Alcohols – A. V. Rudnev, A. V. Vannikov, and N. A. Bakh 416 473
Radiolysis of Aqueous Solutions of Fragments of Nucleic Acids. Reactions of Pyrimidyl Radicals with Alcohol – N. S. Fel', L. A. Zaozerskaya, and P. I. Dolin. 418 475
Peculiarities of the Radiolysis of Methanol under the Action of Fission Fragments – I. A. Bulanov, E. V. Starodubtseva, and E. A. Borisov. 420 476
Investigation of the Formation and Conversions of Radicals in γ-Irradiated Solid Isobutylene by the ESR Method – N. F. Shamonina and A. G. Kotov 422 478

Volume 6, Number 6 November-December, 1972

Nitrogen Molecule Dissociation from Excited Electronic States. II. Dissociation under Electron Collision – E. R. Mamikonyan, L. S. Polak, and D. I. Slovetskii 425 483
Formation of Radical Pairs in Acridine–Acridane Monocrystals under the Action of Linearly Polarized Light – G. P. Voskerchyan and Ya. S. Lebedev. 431 490
The After-Effects of an Isomeric Transition Studied in Frozen Solutions of Tin Compounds – A. N. Murin, S. I. Bondarevskii, V. V. Dzhurzha, and V. A. Tarasov 435 494
Uranyl Chemiluminescence Excited by Ozone in Concentrated Sulfuric Acid – G. S. Parshin, R. G. Bulgakov, V. P. Kazakov, and E. V. Dmitrieva. 438 498
Direct and Sensitized Photoreduction of Anthraquinone Derivatives in Aqueous and Aqueous Alcoholic Solutions – V. A. Kuz'min, A. B. Karyakin, and A. K. Chibisov 442 502
Photosensitized Decomposition of Acetyl Peroxide – V. L. Ivanov, G. V. Filimonova, and M. G. Kuz'min 446 507
The Effect of Transition Metal Oxide Additions on the Radiation-Catalytic Activity of Aluminum and Magnesium Oxides – V. I. Vladimirova, G. M. Zhabrova, and O. V. Krylov 449 510
A Study of the Photostimulated Recombination Luminescence of γ-Irradiated Methylcyclohexane and Cyclohexane at 77°K – V. V. Kulakov and V. G. Nikol'skii 452 514

Effect of Visible Light on γ-Irradiated Inclusion Compounds of Methyl Alkyl Ketones with Urea – A. L. Karasev 456 519
Radiolysis of NF_3 and N_2F_4 under the Action of Fast Electrons – V. N. Cherednikov 461 525
Influence of pH on the Stationary Concentrations of Molecular Radiolysis Products of Water – G. Raichevskii 464 529
Determination of the Optimum Temperature Conditions in the Plasmochemical Process for Producing Acetylene – V. G. Avdeev and V. M. Volodin 470 536
The Mechanism of Eosin-Sensitized Photochemiluminescence of Solutions of Glycyltryptophan – I. I. Sapezhinskii, E. G. Dontsova, and V. M. Shiryaev 475 542

ABSTRACTS

A Possible Mechanism of Photochemical Reactions – A. A. Dozorov and V. M. Novikov 481 549
Growth Rates of Polymer Films in a dc Discharge – A. B. Gil'man, V. M. Kolotyrkin, and N. N. Tunitskii 482 550

BRIEF COMMUNICATIONS

Role of Ions in the Radiation Polymerization Mechanism of Vinyl Chloride in the Gas Phase. I. Investigation of the Mobility of the Vinyl Chloride Ions – N. G. Volkov, G. M. Gorbachenko, Yu. S. Deev, and V. K. Lyapidevskii 483 552
Role of Ions in the Radiation Polymerization Mechanism of Vinyl Chloride in the Gas Phase. II. Investigation of Electron Attachment in Vinyl Choloride – N. G. Volkov, G. M. Gorbachenko, O. V. Lapidus, and V. K. Lyapidevskii 485 553
Radiolysis of Solutions of Uranyl Nitrate in Methanol in a Nuclear Reactor – L. A. Bulanov, V. V. Borovkov, and E. A. Borisov 487 555
Radiation Chemical Reactions in Butadiene–Acrylonitrile Copolymers in the Presence and Absence of Inhibitors – Z. F. Il'icheva, M. M. Zigmunt, T. G. Degteva, and N. A. Slovokhotova 489 556
Radiolysis of Aqueous Solutions of $[Cr\ en_3]Cl_3 \cdot 3.5\ H_2O$ – L. N. Neokladnova, I. P. Silivanchik, and V. V. Pansevich 491 558

CHRONICLES

First All-Union Symposium on Plasmochemistry – F. B. Burzel' 494 560

INDEX

Author Index, Volume 6, Numbers 1-6, 1972 499
Tables of Contents, Volume 6, Numbers 1-6, 1972 503